REMARKS

I. Status of the Claims

At the time of the Action, Claims 29-34 and 36-49 were pending. Claims 29, 32 and 34 were rejected under Section 112, second paragraph. Claims 29-33 and 36-49 were rejected under Section 103(a). Claims 32 and 47-48 have been canceled. The rejections are addressed hereinbelow.

II. The Section 112 Rejections

The Action states that Claim 29 is confusing in that what is being claimed is unclear (*i.e.*, a pipeline pig or a suspension system or a pipeline pig in combination with a suspension system, etc.). Claim 29 has been amended to recite "a pipeline pig provided with a suspension system for a pig shaft." Applicants submit that Claim 29 satisfies the requirements of Section 112.

The Action states that Claim 34 states that the piston is internally mounted but does not state whether the piston is inside the pipe being cleaned or in the pig shaft. Claim 34 has been amended to recite that the piston is internally mounted in the pig shaft.

In view of the foregoing, Applicants respectfully submit that the rejections under Section 112 have been overcome, and respectfully request that they be withdrawn.

III. The Section 103(a) Rejections

The Action rejects Claims 29-31 as being unpatentable over U.S. Patent No. 2,887,118 to Loeffler (Loeffler) in view of U.S. Patent No. 4,938,167 to Mizuho (Mizuho) or WO/97/14910 to Dippel (Dippel).

The Action states that the link assembly of Loeffler is offset from the shaft. *See* the Action, page 8. The Action also concedes that none of the references "specifically require an offset angle as specified in Claims 30-31." *See* the Action, page 5. However, the Action takes the position that it would have been obvious "to have adjusted the inclination of the links that maintain the wheels in their extended outwardly position in order to maintain the

desired load of the wheels against the inside wall of the pipe so that the surface of the wheel wears evenly." *See* the Action, page 5.

In response, Applicants note that Claim 29 recites that the "pivot axis of the pivot pin of the suspension arms is offset at an angle from the plane of the cross section of the pig shaft so that the pig rotates as it travels down a pipe." Applicants submit that at least this feature is not taught or suggested by Loeffler, Mizuho or Dippel.

As noted above, the Action states that the link assembly of Loeffler is offset from the shaft. However, as shown in Figure 1 of Loeffler, the pivot pin of the links and arms (56, 65, 66, and 55) in Loeffler is not offset at an angle from the plane of the cross section of the pig shaft as recited in Claim 29.

The Action has not provided particular evidence to modify the references from the prior art with no knowledge of the claimed invention as required by Section 103. In particular, none of the references address the problem that can be solved with offset suspension arms (uneven wear of the device during use) or the solution presented by the present invention (rotation of the pig). In fact, the Action does not address the rotation of the pig, but instead states that it would be obvious to adjust "the inclination of the links that maintain the wheels in their extended outwardly position in order to maintain the desired load of the wheels against the inside wall of the pipe so that the surface of the wheel wears evenly." As noted on page 2, paragraph 2 of the Specification, in a conventional wheeled pig having independently-sprung wheels, the weight of the pig will usually rest on a fraction of the wheels at any given time. For example, when the pig is traveling through a horizontal pipe, the lowest set of wheels will take most of the load. This can cause the pig to run off center and cause uneven wear on the sealing discs. According to embodiments of the present invention, the offset angle of pivot pin of the suspension arms results in rotation of the pig, which, in turn, can result in more even wear on the wheels. The suspension can be tuned by adjusting the position of the tie rod pivot point on the suspension arm as discussed, for example, on page 5, paragraphs 2-3 of the Specification.

In addition, Applicants submit that none of the references discloses a "suspension system [that] provides substantially constant wheel loading to accommodate a multi-diameter

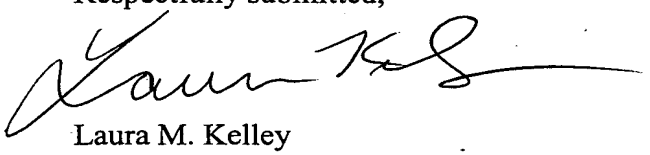
pipeline" as recited in Claim 29. This feature can permit the pig to travel along pipelines of varying diameters such as, for example, those which are being laid as part of the large Asgard transport line in the Norwegian Sea. *See* page 3, paragraph 1 of the Specification. Previously, pigs may only be able to adjust over a few inches.

For at least these reasons, Applicants submit that it would not have been obvious to the ordinarily skilled artisan to conceive the recited subject matter based on the disclosure of Loeffler, Mizuho or Dippel. Consequently, Applicants respectfully request that the rejections under Section 103(a) be withdrawn.

IV. Conclusion

Inasmuch as all of the issues raised in the Action have been addressed, Applicants submit that the present application is in condition for allowance and the same is earnestly solicited. The Examiner is invited to telephone the undersigned at 919-854-1400 for resolution of any outstanding issues.

Respectfully submitted,



Laura M. Kelley
Registration No. 48,441

Myers Bigel Sibley & Sajovec, P.A.
P. O. Box 37428
Raleigh, North Carolina 27627
Telephone: (919) 854-1400
Facsimile: (919) 854-1401
Customer No. 20792

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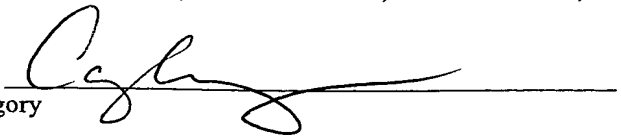
Signature: 
Carey Gregory